

REMEDIES OF THE TALMUD: A SECOND LOOK AT THE MEDICAL BENEFITS OF HONEY

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The Talmud relates the story of Rabbi Gamliel, who while traveling, had to interrupt his journey upon the arrival of the Sabbath. Thus, he left his donkey loaded with spoiled honey over the entire Sabbath (*Shabbat* 154b). An argument between the Talmudic Rabbis ensued as to why Rabbi Gamliel did not unburden his donkey. The question arose: why was Rabbi Gamliel carrying spoiled honey in the first place? The answer was that honey was used to treat abrasions on a camel's back.

This is just one of several instances in the Talmud in which honey is described as having medicinal properties. This substance is described as a treatment for sores (*Shabbat* 76b), as a major ingredient in a remedy for bulimia (*Baba Kamma* 85a), and as a means to “enlighten the eyes of man” (*Yoma* 83b). However, the Talmud is not the only historical document to present ancient medical uses of honey. A translation of hieroglyphics in the Smith Papyrus, which dates back to between 2600 BCE and 2200 BCE, shows that a mixture of grease, honey, and fiber was used to treat wounds. Later, between 300 and 400 BCE, Hippocrates recommended a mixture of honey and vinegar for pain remedy [1].

However, with the progression of modern science, many of these ancient treatments fell into disuse. They were considered ritualistic and primitive, especially within the Western conscientiousness. This belief became pronounced after 1910, when Paul Ehrlich developed the science of chemotherapy through his discovery of salvarsan to treat syphilis. Chemotherapy, a term coined by Ehrlich, is the use of chemical substances to kill pathogens without harming the host. While the older methods used herbal concoctions to treat general symptoms, doctors who employed chemotherapy sought to find specific natural or synthetic chemicals that had a precise effect on a given pathogen. This practice gave way to drugs as we now know them [2].

Currently, researchers seek to fuse the knowledge of the ancients with the science and technology of today. In part, this “resurrection” of ancient medicine is motivated by the realization of physicians that as bacteria become increasingly resistant to current drugs, researchers need to find new antibacterial agents. Thus far, several studies in which honey has been used to fight

bacteria have shown great success. In one such study, honey used in concentrations of 30% to 50% was more successful than widely used antibacterial agents such as ampicillin and cephaloridine at inhibiting the growth of nine types of bacteria that cause the symptoms associated with urinary tract infections. A study by Jeddard *et al.* showed that honey prevented the growth of bacteria, including *Salmonella shigella*, *Escherichia coli*, and *Vibrio cholera* [1]. These bacteria are some of the most common causes of fatal illnesses worldwide.

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Other studies have also substantiated the claims made in the Talmud regarding the wound healing abilities of honey. Biglari *et al.* studied the effects of Medihoney™ dressings on 121 wounds of patients over two years in several hospitals throughout Germany and Austria. Their results showed that the wounds of these patients healed relatively quickly and showed less necrosis than wounds treated with conventional dressings [3]. Oladejo *et al.* found that when gauze soaked in honey was used on excisions in Wistar rat skin, after 10 days of treatment wound contraction was significantly greater than in rats in the control group [4]. Scientists believe that the positive effects of honey on wound healing are a result of its hygroscopicity and hypertonicity. Both qualities facilitate wound hydration, as hygroscopicity is the ability to attract water molecules, and hypertonicity is the state of having higher osmotic pressure than the surrounding body fluids, which leads to water absorption. Honey is also acidic and has other antibacterial properties that prevent infection [5]. Furthermore, honey contains the enzyme catalase, which is involved in separating slough and necrotic tissue [1] and may contain tissue growth factor [5].

A study in which epithelial corneal edema was treated with raw honey was performed by Dr. Ahmad M. Monsour specifically to determine if the Talmud's claims regarding the positive health effects of honey on the eyes were true. Corneal edema is the swelling of the cornea, the transparent dome above the iris that

occurs when injured cells cannot regenerate and fluid accumulates in the cornea. Monsour found that when a drop of honey was applied to the eyes of 16 patients with epithelial corneal edema, all of the patients' corneas cleared for approximately one hour, allowing greater visual acuity. These results were documented over multiple visits, and in some patients, the clearing allowed for better analysis of the eye's condition and even an opportunity for laser therapy [6]. Since one symptom of corneal edema is a visible clouding of the eye, it is possible that the Talmudists were witnessing similar treatments when they wrote, "honey enlightens the eyes" (*Yoma* 83b).

Despite the many advantages provided by honey, there are some minor risks involved in its medical use. Honey is known to cause infantile botulism, a condition in which spores of the bacteria *Clostridia botulinum* colonize the infant's large intestine and produce a toxin that causes weakness and loss of muscle tone.

Clostridia can survive in honey in the form of a spore, and the intestines of infants contain a growth factor that promotes its propagation. However, as this growth factor is not in the intestines of adults, honey is generally safe for adult patients to use orally and topically. Gamma-irradiation has been used to sterilize honey, thus completely eliminating the danger of *Clostridia* infection to infants [6].

Overall, the therapeutic benefits of honey far outweigh its risks. Several studies have shown its uses as an antibiotic, a treatment for wounds, and a potential remedy for disorders of the eye. While further research must be done to determine the ways in which honey can be utilized most effectively, many doctors are hopeful that it will eventually be incorporated into standard medical use. Perhaps, as they continue their research, scientists will reference the Talmud to uncover even more remedies in its pages. ■

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